# AKG WMS 4000 RECEIVER

## The cutting-edge True Diversity Receiver

The SR 4000 True Diversity Receiver offers maximum convenience with state-of-the-art technology and the widest range of functions in its class.

Naturally, the SR 4000 is optimally equipped for the setup of large multichannel systems, so that connecting antenna splitters, power supply units, computer networks, etc. is quite easy.

The accurate battery life readout is a novel and invaluable feature for live sound applications. The transmitter uses a pilot tone to transmit accurate information such as battery status to the receiver that displays the remaining battery life in hours. The pilot tone decoder also evaluates and displays other important data including the status of the MUTE switch on the transmitter.

The integrated software does not only permit automatic setup and frequency scanning but also remote control and monitoring from a PC via a dedicated interface. With the optional MCS 4000 Mission Control Software, setting up and monitoring highly complex systems is child's play. A logic output allows control of external devices, e.g., automatic microphone mixers.

Of course the SR 4000 operates in an extremely wide UHF band (30 MHz) with preprogrammed frequency presets, each providing up to 18 intermodulation-free subchannels*. The maximum number of selectable frequencies is 1200. The large backlit color display and the setup control make the unit easy to use, and a programmable LED ring indicates selectable critical conditions.

Housed in a half-rack 19" all-metal case, the SR 4000 is the most compact, reliable, and powerful UHF receiver in its class.

**Backlit display**
High-contrast color display using "Black Mask" technology indicates all system parameters in plain text.

**Half-rack 19" all-metal case**
Standard accessories include a rugged rack-mounting kit.

**SR 4000 Receiver**

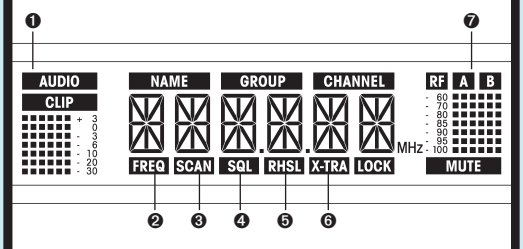
**Jog switch**
For simple programming of the receiver

**Programmable status display**
Displays for LowBatt, Audio Level, RF Level and Diversity at a glance

**JOG SWITCH**
Multifunctional control element for system programming, no tool needed, can be operated single-handed.

**Display details**

- ❶ 8-segment Audio Bargraph Display
- ❷ Frequency Setup Menu, 3 modes: Auto, Preset, Frequency
- ❸ Scanning function: AutoScan detects RF signal in the entire bandwidth
- ❹ Setup for SQL, Level, or TCSQ




**Display details**

- ❺ Rehearsal Mode: Quick check of RF and AF signal quality
- ❻ Special functions: Receiver name, status display, threshold level, system info, …
- ❼ 8-segment RF Bargraph Display incl. diversity

* The maximum number of selectable channels may vary in accordance with local frequency plans.

**Auto Setup**
Automatic frequency setting and finding of free channels.

**Environment Scan**
Analyzes the RF environment for interference-free transmission.

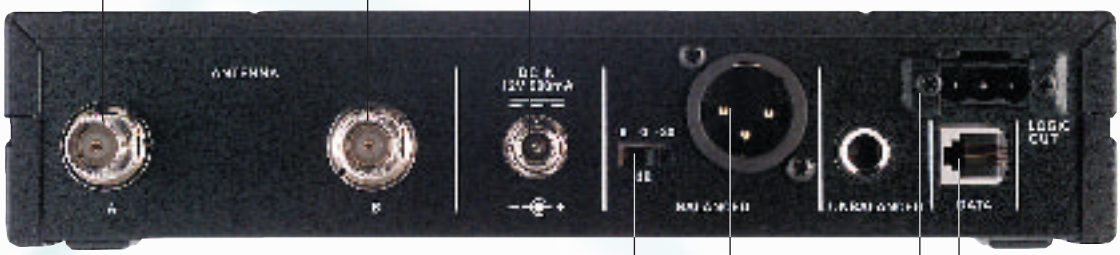
**Rehearsal Mode**
Setup Assistant for the optimal setting of the system parameters.

**Battery life display**
Display of transmitter's remaining battery life in hours.

**Environment Scan and Rehearsal Mode**
The SR 4000 comes with a large number of assistants that make a professional setup incredibly easy and substantially increase operating reliability. The Environment Scan "spies on" the RF environment and warns of interfering frequencies in time (e.g., active TV transmitters etc.).

Rehearsal Mode also features an early warning system that records the most important system parameters during the soundcheck and can be used to identify potential problems ahead of time.

**Multichannel capability, frequency management, and auto setup**
Its wide frequency range and multiplicity of selectable frequencies make the WMS 4000 an excellent choice for multichannel systems. The built-in frequency management system helps you find the right frequency. Preset banks provide sets of intermodulation-free frequencies. The Auto Setup function rapidly identifies clean frequencies. For a FREE download of the frequency management program for your PC, visit **www.akg.com/frequencies**.




**BNC Antenna port**
For connecting simple or complex antenna networks.

**Lockable DC input**
For a secure connection to local or central power supply components, such as the PSU 4000.

**Professional XLR and jack outputs**
With output level selector.

**Network output**
For remote control from a PC using MCS 4000 control software.

**LOGIC OUT**
For the control of external devices such as automatic microphone mixers and media control systems.

**Logic Out and Output Level Selector**
The Logic Out supplies the following information: first, a signal indicating the mute status of the audio output, and second, the condition of the transmitter batteries. A unit with Logic In can be programmed to have a signal light illuminating when the transmitter battery is low. The output level selector can be used for setting the audio signal either to standard level or to +6 or -30 dB. This function allows you, for example, to adjust the level of a wireless condenser microphone to that of a hardwire dynamic microphone.

# AKG WMS 4000 CHARGING SYSTEM

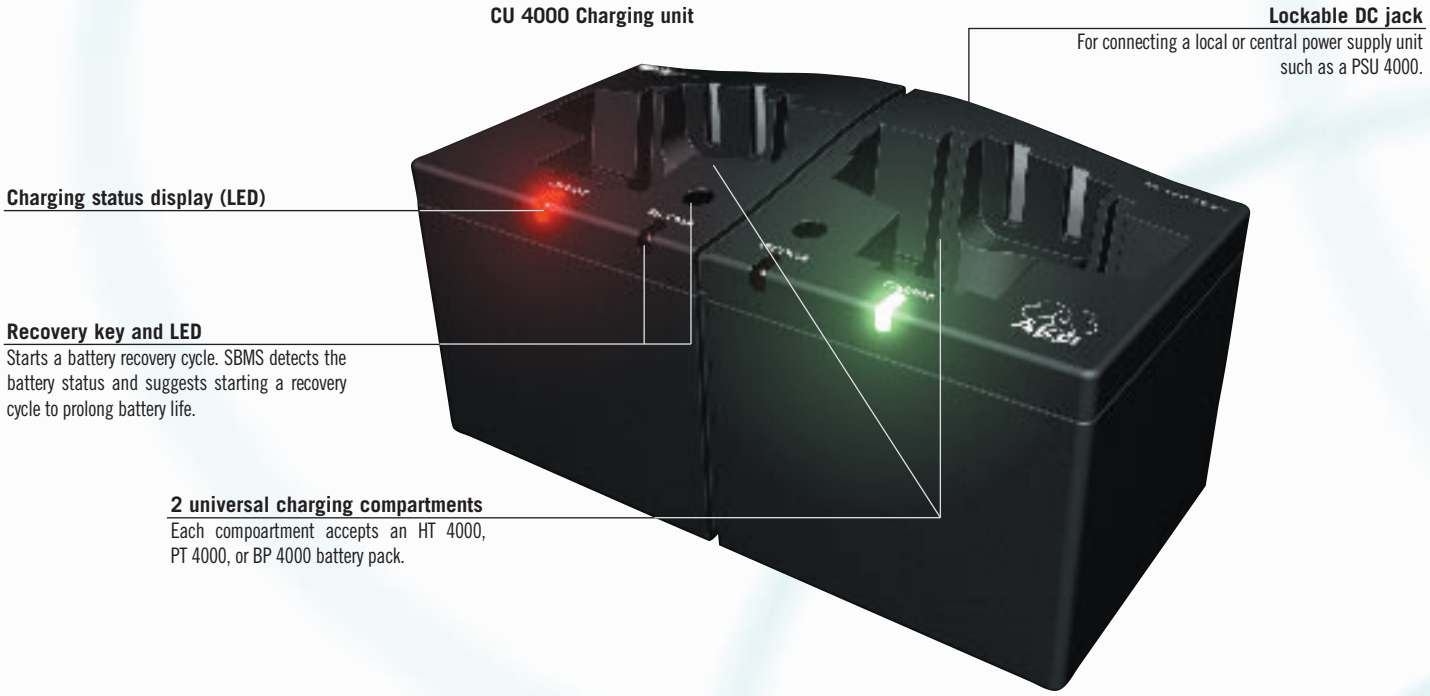
## The intelligent Way to power WMS 4000 Transmitters

The CU 4000 Charging Unit revolutionizes battery management for wireless systems. The heart of the charging system is the BP 4000 Battery Pack with built-in active monitoring. An integrated microprocessor continuously monitors battery status and accurately calculates the remaining battery life. In conjunction with a WMS 4000 wireless transmitter, these data are not only indicated on the transmitter display but are also transmitted to the receiver via pilot tone. The transmitter's remaining battery life can thus be read out on the receiver within a few minutes' accuracy, putting an end to the nightmare of batteries failing in the middle of a performance.

A processor-controlled pulse charging system charges the battery pack quickly yet gently, while the integrated "Charge Balance Management" feature makes sure that only as much energy is fed to the battery pack as had previously been drawn from it. In addition, several monitoring circuits and a temperature sensor prevent the battery pack from being overcharged.

A self-discharge counter does not only measure battery discharge during operation but also determines the amount of discharge after prolonged storage periods. As charging begins, the BP 4000 circuitry communicates with the CU 4000 charging unit in order to "tailor" the charging process optimally to the status of the battery pack. To eliminate memory effect, the CU 4000 automatically checks whether the batteries need a recovery cycle, and automatically starts the cycle upon confirmation by the user. The charging unit provides two charging compartments that allow you to charge two transmitters (HT 4000, PT 4000) or two battery packs at the same time. Charging time apr. 1 hour.

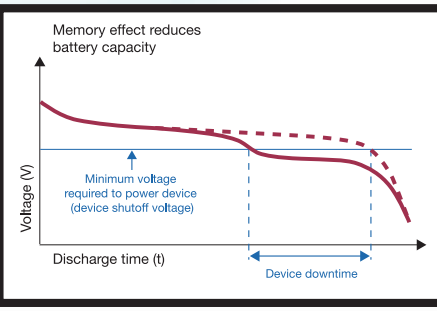
The combined BP 4000 plus CU 4000 system is an investment that will quickly help cut expenses and reduce environmental hazards from used batteries.


CU 4000 Charging unit
Lockable DC jack
For connecting a local or central power supply unit such as a PSU 4000.
Charging status display (LED)
Recovery key and LED
Starts a battery recovery cycle. SBMS detects the battery status and suggests starting a recovery cycle to prolong battery life.
2 universal charging compartments
Each compoartment accepts an HT 4000, PT 4000, or BP 4000 battery pack.

### BATTERY CARE

Rechargeable batteries are known to suffer from the so-called "memory effect". The capacity of a rechargeable battery will decrease over time if it is not fully discharged. If a battery is discharged only to 50% of its capacity over many charging cycles, it will finally "believe" its capacity to be only 50%, so that it cannot be charged fully any more. To eliminate memory effect, we recommend completely discharging and recharging the battery pack periodically (recovery cycle). SBMS permanently monitors battery parameters and detects the need for a recovery cycle.

The Recover LED illuminates to indicate it is time for servicing the battery pack. Since a recovery cycle may take 14 hours, the best time to run it is during the night. In any case you will need to start the recovery cycle manually. If you service your battery pack regularly it will retain its maximum capacity throughout its useful life.


Memory effect reduces battery capacity
Minimum voltage required to power device (device shutoff voltage)
Voltage (V)
Discharge time (t)
Device downtime

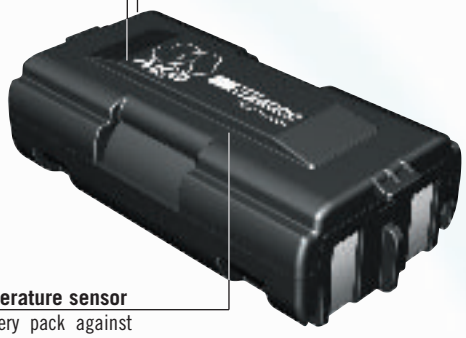
## MOBILE CHARGING UNITS

**CU 4000 – Charging unit in a flight case**
Several charging units can be fitted into a rugged flight case as a compact solution for large systems. (Costume Mode)

## BP 4000 Intelligent quick-replacement battery pack

**Internal RAM**
Records charging/discharging processes and provides a database for optimizing charging parameters (Charge Balance Management).

**Data interface to transmitter electronics**
Sends battery status information to the transmitter for accurate capacity readout.



**Integrated temperature sensor**
Protects the battery pack against overcharging and damage.

### Charging unit – Features:

- **Smart battery management – overcharging protection**
- **2-slot power management**
- **1 hour quick charge**
- **Recovery Mode for complete recovery of old or damaged batteries**
- **Integrated "database" for optimum charging management**
- **Integrated temperature sensor**
- **Self-discharge counter**
- **Integrated RAM**

**Smart Battery Management System (SBMS)**

An environmentally friendly money saver, the SBMS Smart Battery Management System is the heart of a completely new charging technology. It monitors battery status and controls the charging process. The battery status is read out in remaining hours of battery life on the transmitter and receiver displays, so you can recharge the battery pack in time. The SBMS includes a number of intelligent monitoring functions.

"Inflection Point and Peak Voltage Detect" stops the charging in time, while an integrated temperature sensor in the battery pack protects it from overheating. The Charge Balance Management feature makes sure that only as much energy is fed to the battery pack as had previously been drawn from it. A self-discharge counter ensures correct charging after the battery pack has been stored for a long time. The battery pack uses an integrated database and charger interface to set its own charging current.

# AKG WMS 4000 ANTENNA SPLITTER

## The Indespensable Component for Large Wireless Systems

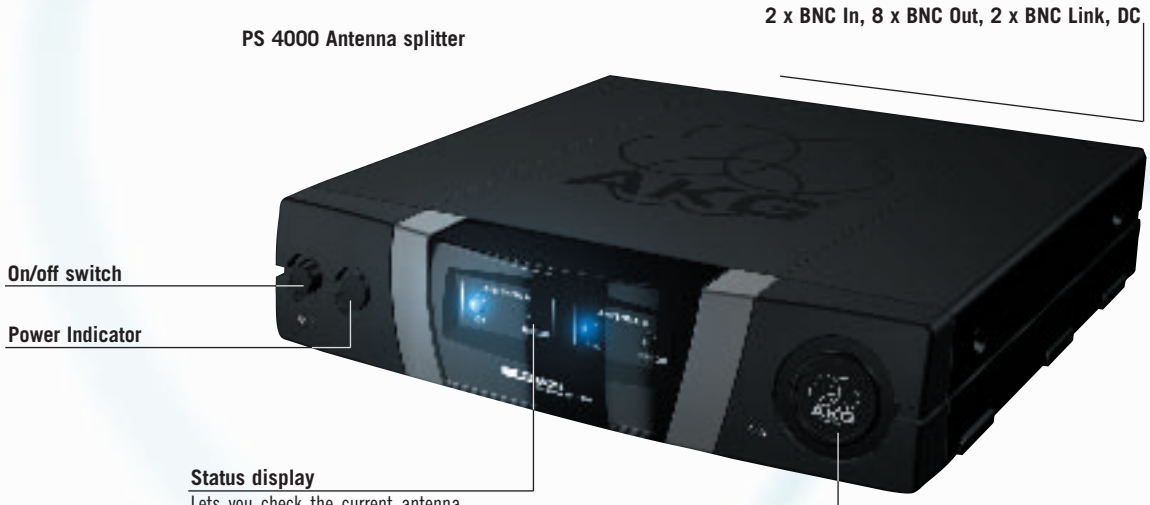
One or several PS 4000 antenna splitters can be used to set up complex systems with long antenna cables, distributed antenna networks for room sharing applications, or to feed the signal from a single antenna pair to several receivers.

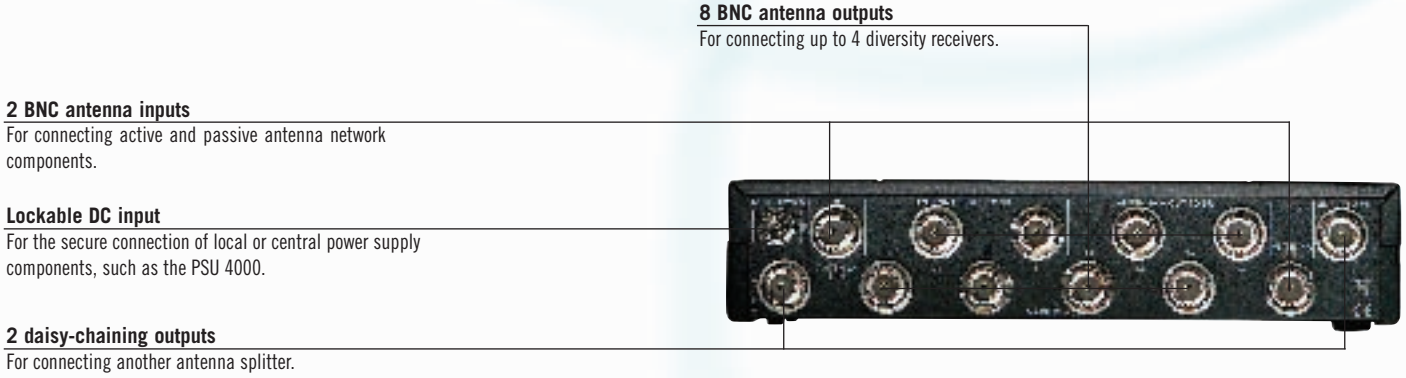
The 220 MHz bandwidth guarantees the full coverage of all channels available in the WMS 4000 system. The processing and amplification of true diversity signals in combination with various optionally available antennas ensure maximum reliability of reception.

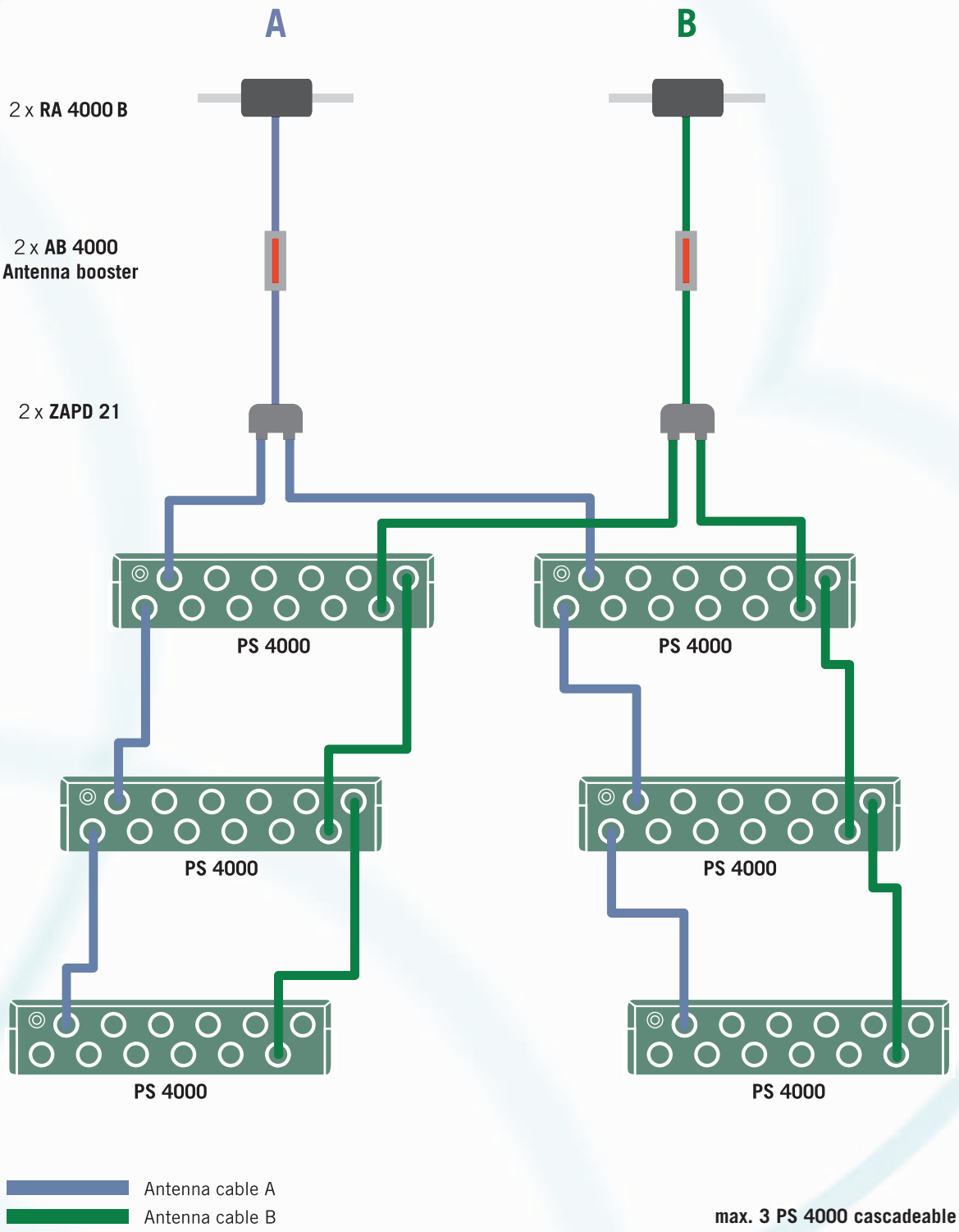
Highly visible LED displays provide a clear status indication even from a distance. A gain selector switch allows for optimum matching to connected antenna cable lengths to ensure optimum signal quality.

The PS 4000 antenna splitter features 2 BNC antenna inputs and 4 diversity outputs on 8 BNC sockets as well as two additional BNC sockets for daisy chaining several antenna splitters. This allows you to implement complex systems with 50 or more receivers.

Of course the PS 4000 can be powered centrally via a PSU 4000 Power Supply Unit so that it can also work as a remote powering unit for active antennas. The required voltage is supplied via the antenna cables, eliminating the need for separate antenna power cables.


PS 4000 Antenna splitter
2 x BNC In, 8 x BNC Out, 2 x BNC Link, DC
On/off switch
Power Indicator
Status display
Lets you check the current antenna network status at a glance.
Switch for matching the RF level to the connected cable length
Calibration switch for optimizing antenna signal levels.


8 BNC antenna outputs
For connecting up to 4 diversity receivers.
2 BNC antenna inputs
For connecting active and passive antenna network components.
Lockable DC input
For the secure connection of local or central power supply components, such as the PSU 4000.
2 daisy-chaining outputs
For connecting another antenna splitter.




**max. 3 PS 4000 cascadeable**

**Selecting antenna cables**

Antenna cables are needed for feeding the signal of a remote antenna to the receiver. However, all antenna cables attenuate the antenna signal (cable attenuation). Since different types of cables have different attenuation values, each type will perform best at a different length. While low-attenuation cables are usually thicker and more expensive, they can be used for much longer runs. You can compensate for long cable runs by using antenna boosters or active antennas. In some cases, however, using the next higher (if slightly more expensive) grade of cable may do the trick, eliminating the need to use active antenna components. The right type of cable can be essential to the performance of your wireless system, prevent problems, and help reduce costs.

A bank of dip switches on the boosters and the PS 4000 antenna splitter allows you to match the RF signal level to the antenna input depending on the frequency band, antenna type, cable type, and cable length.

# AKG WMS 4000 ANTENNAS/ACCESSORIES

## Antennas tailored to every Situation

With its antennas and optional accessories specially "tailored" to the WMS 4000 System, AKG offers the optimum solution to any type of application, allowing users to implement even the most complex antenna networks easily and efficiently.

With its omnidirectional polar pattern, the RA 4000 B Booster Antenna is is a good choice for most applications. Thanks to its rugged, water-resistant case and the integrated antenna booster for use with long antenna cables, the RA 4000 B is even suited for outdoor applications.

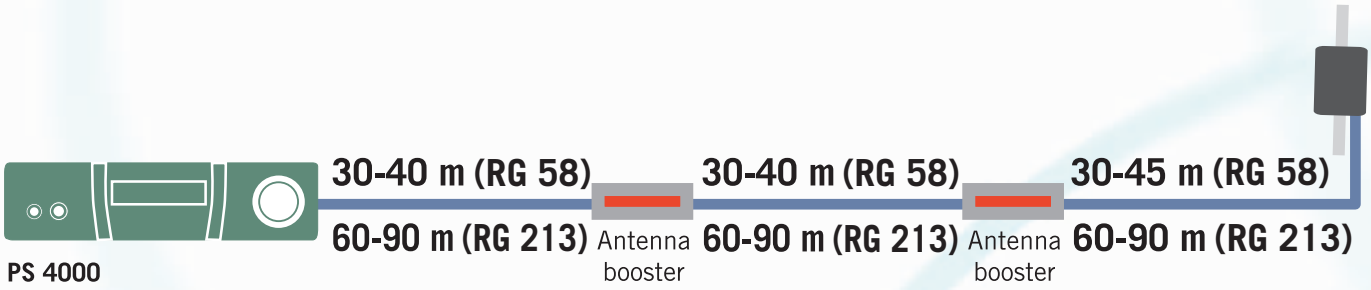
The SRA 1 directional antenna is especially suitable for setting up long-range radio links if short antenna cables are used. Because of the passive operation and the 70° beam angle in combination with good off-axis attenuation and front-to-rear ratio, it works particularly well in interference-prone RF environments.

The SRA 2 B is an active directional antenna that works with long-range radio links and long antenna distances. An optional laser positioning pointer makes it easy to aim the antenna precisely at its target area.

The AB 4000 is a highly efficient antenna booster for inserting into long antenna cables. One booster can compensate for approx. 17 dB cable attenuation, allowing cable runs to be extended. Up to 2 antenna boosters can be used in series for extremely long cable runs.

The ASU 4000 is a remote power adapter for creating additional power feeds to complex antenna networks. Thanks to its small dimensions, it is even possible to integrate the ASU 4000 into narrow antenna cable ducts at a later date.

**Cabling example/cable lengths:**



Installed sound

Live sound

**Selecting and placing antennas**

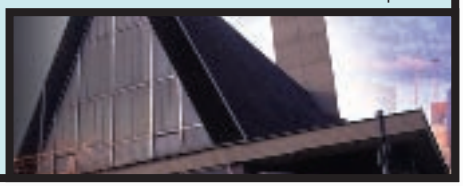
The antenna is the "ear" of the radio system, which is why antennas must be selected and placed carefully. Antennas have polar patterns similar to those of microphones, and depending on the application, you may need Yagi antennas (comparable to cardioid/hypercardioid microphones), Log Periodic (like shotgun microphones), or omnidirectional antennas.

If the transmitters will be used only within a rather small area such as a stage, use directional antennas. Directional antennas are generally used to overcome long distances or suppress unwanted signals from other directions, e.g., at open-air locations. Omnidirectional antennas are ideal for near-field applications where no external-direction interference is expected, e.g., indoor events (most directional antennas are big and difficult to conceal) or multipurpose halls with no preferred direction.

TV studio

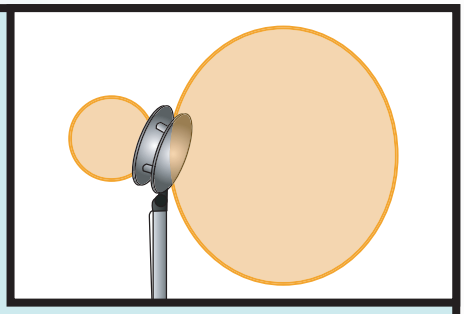
Theater

Worship center



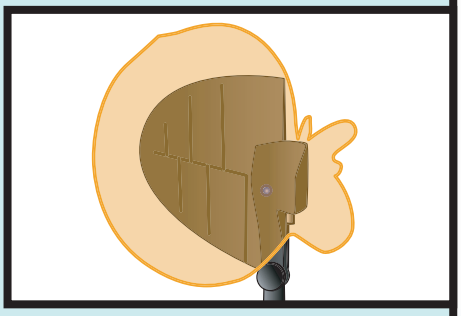
**SRA 1 – Passive wideband directional antenna**

- For indoor and outdoor use, in particular for setting up long-range radio links
- For use with short antenna cables
- Water-resistant design with BNC output



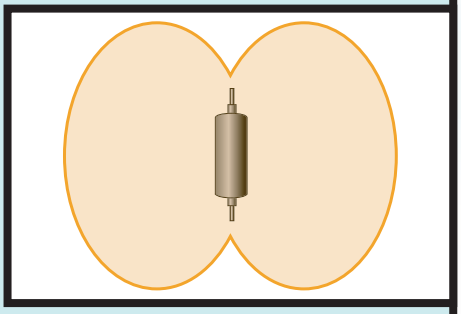
**SRA 2B – Active wideband directional antenna**

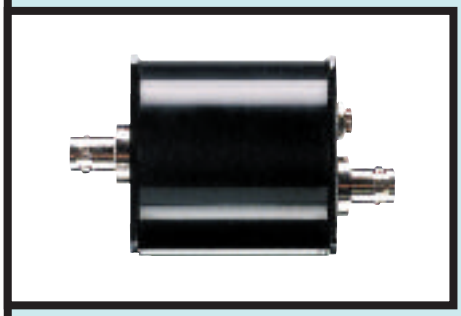
- For indoor and outdoor use, in particular for setting up radio links for distances up to 300 m (1000 feet)
- Integrated high-performance antenna booster for use with long antenna cables
- Remote powering option
- Rugged, water-resistant case with BNC output
- Status LED



**RA 4000 B – Omnidirectional wideband booster antenna**

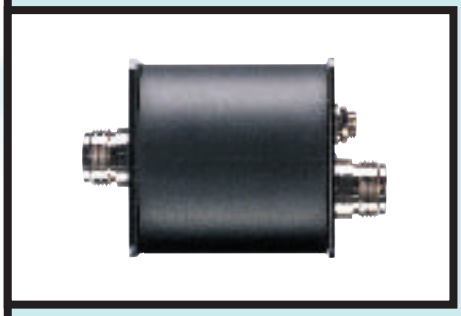
- For indoor and outdoor use, in particular for near-field antenna setups with no preferred direction
- Integrated high-performance antenna booster for use with long antenna cable
- Remote powering option
- Rugged, water-resistant case with BNC output
- Status LED





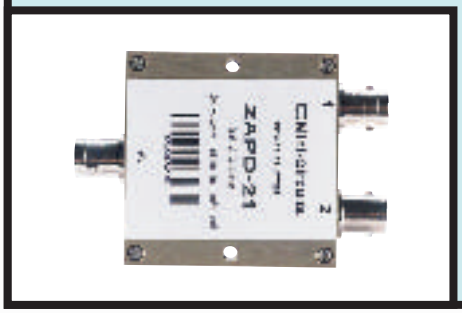
**AB 4000 – Antenna booster**

- BNC or N connector inputs/outputs
- DC input
- Status LED
- Water-resistant case
- DIP switch for adjustable gain



**ASU 4000 – Remote powerd adapter for antennas**

- BNC or N connector inputs/outputs
- Lockable DC input
- Status LED
- Water-resistant case
- for max. 3 active elements




**ZAPD-21 Antenna combiner**

- For indoor and outdoor use
- For setting up complex antenna networks
- Use as 2 in - 1 out antenna combiner for multiple-antenna systems
- Use a 1 in - 2 out antenna splitter for daisy-chaining several PS 4000s within large multichannel systems

# AKG WMS 4000 NETWORK CONCENTRATOR

## The Link between the WMS 4000 and a PC Network

The HUB 4000 is the intelligent hardware interface between a WMS 4000 wireless system and one (or several) PCs. No more need for cumbersome cabling; the HUB 4000 concentrates the data flow of up to eight receivers and connects easily to any PC with an Ethernet interface.

Naturally, complex systems can also use several HUB 4000s – in fact, up to 16. With eight receivers per hub, you can operate a maximum of 128 receivers – from a single PC!

The HUB 4000 meets all standards and requirements for smooth operation with PC components. Connection to the PC or PC network is via standard CAT-5 Ethernet cables with RJ-45 connectors, while the data are transmitted via IP protocol.

Working with WMS 4000 multichannel systems, you can optimize operating convenience and reliability by simply linking the WMS 4000 PC network components with standard PC accessories. This allows you to send receiver data through the HUB to a wireless LAN, and receive them on a tablet PC. In the REHEARSAL mode, you can take the PC on the stage and monitor important data such as RF levels on site. This makes it incredibly easy to set up the most complex system and ensures maximum operating reliability.

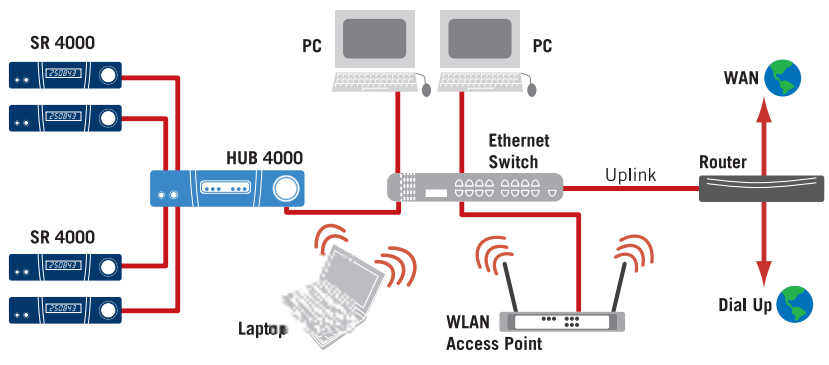
**HUB 4000 Network concentrator**

**Data connection**
For a reliable data transfer to the PC and addressing the MCS 4000 "Mission Control Software".

**Example: WMS 4000/PC network**

The example shown opposite demonstrates how state-of-the-art PC and audio technologies can be linked to ensure a level of convenience unknown to date.

You can service and operate the entire WMS 4000 system from permanently installed computers or a laptop with a wireless connection to the network. You can also access the AKG homepage via internet at any time, e.g., for downloading the frequency management program for other WMS systems, updating firmware, setting up a remote desktop, etc. Total networking for total control!



# AKG WMS 4000 MISSION CONTROL SOFTWARE

## Your Computer as a WMS 4000 Control Center

The MCS 4000 Mission Control Software allows you to display the entire setup of a WMS system on screen and to edit all settings simply by mouse click.

All relevant data, such as RF level, audio level, diversity activity, battery status of the transmitters, Mute/Off etc. are displayed in real time on a graphic user surface, with important warning messages being inserted so as to catch the eye.

You can even set up the basic parameters of a complete system from the computer: remote control software puts Environment Scan, Auto Setup and Rehearsal Check at your fingertips.

"History" recording is another special feature of MCS 4000 – i.e., storing the monitoring data of all channels in a log file to help with the setup and the analysis of completed system.

You can also take a snapshot of the current status any time, which is especially helpful if you want to mail it to off-site co-workers.

Linking a wireless system to the computer only requires the integration of one or several WMS 4000 HUB Network Concentrators plus a computer (>500 MHz) with an Ethernet port.

MCS 4000 is available for Windows, Mac OS X, and Linux. A demo version as well as software and firmware updates and drivers can be downloaded from www.akg.com.

**"Get a Cup" Setup Mode**

Finding and setting the right frequencies for a multichannel setup is a difficult and time-consuming job. The WMS 4000 provides several functions including Auto Setup and Environment Scan to speed up the process. The MCS 4000 is an incredibly convenient software tool. It scans the system's RF environment and uses an integrated frequency management database to calculate optimum frequencies. It automatically programs these frequencies into the receivers via the HUB 4000 to complete the setup while you have a cup of coffee.

**"Moving PC" Rehearsal Mode**

When working with WMS 4000 multichannel systems, you can optimize operating convenience and reliability by simply linking the WMS 4000 PC network components with standard PC accessories. This allows you to send receiver data through the HUB to a wireless LAN, and receive them on a tablet PC. In the REHEARSAL mode, you can take the PC on the stage and monitor important data such as RF levels on site. This makes it incredibly easy to set up the most complex system and ensures maximum operating reliability.

# AKG WMS 4000 POWER SUPPLY

## Reliable Power Supply for the complete WMS 4000 System

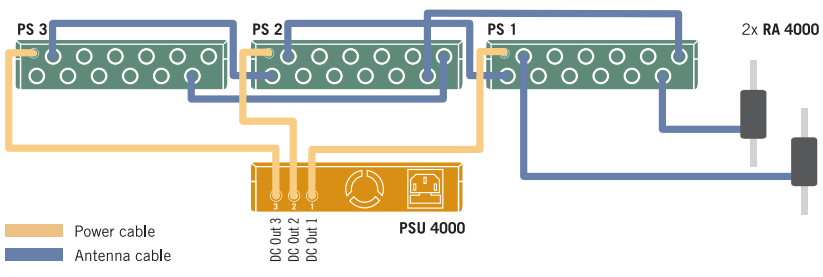
The PSU 4000 is a central power supply unit for all components of the WMS 4000 system. A stable, interference-free voltage (12 V/2 A or 12 V/2.5 A respectively) at three outputs ensures a stable network. Valuable power strip outlets are thus kept free, and hum from poorly grounded power cables can be minimized.

The PSU 4000 is an essential tool especially for mobile racks, since it saves a lot of time during installation and takedown. The clearly visible display indicates the current power supply status. The low-noise fan ensures optimum cooling of the power supply unit, even at high ambient temperatures and under full load.

PSU 4000 Central power supply unit
1 x AC Input, 2 x DC out 12 V, 2 A, 1 x DC out 12 V, 2,5 A
On/off switch
Power indicator
Status display
100 – 240 V AC input
3 x DC outputs

**Tailor-made DC outputs**

If each of the three DC outputs is connected to a PS 4000 antenna splitter, the antenna splitter to which the antennas are ultimately connected must be connected to DC OUT 1. This is because due to cable attenuation, the antenna system will draw 2.5 A, which is only available from DC OUT 1 (outputs #2 and #3 supply 2 A each).



# AKG WMS 4000 HEADPHONE AMPLIFIER

## Monitoring without a Mixer

Integrating an HPA headphone amplifier into the WMS 4000 system makes life a lot easier for the FOH engineer. During the performance, the audio output signals of each receiver can be monitored directly, without having to bother with an extra mixer. This feature proves an invaluable advantage, particularly if the WMS 4000 system and the mixer are located in different rooms, with the audio connection as a potential error source.

The HPA 4000 comes with eight jack inputs and one jack output for headphones. Channels can be routed to the headphone output using a rotary control. A clearly visible display indicates the currently active channel.

**HPA 4000 Headphone amplifier**

**8 line input jacks, DC input (lockable)**

**On/off switch**

**Headphone jack**

**Display**
Indicates the active channel.

**Jog control**
Selects the signal to be monitored and sets the monitoring level.

**8 line level input jacks**

**Lockable DC input**
Securely connects to a local or central power supply component, such as the PSU 4000.

**Recommended headphones**

For the monitoring of live performances, AKG recommends closed-back headphones in order to ensure maximum attenuation of ambient noise.

The best choices are the K 171 Studio and the K 271 Studio.

**K 171 Studio**

**K 271 Studio**

# WMS 4000 8-CHANNEL SETUP

## Example: 8-Channel System for variable Arrangements of Seminar Rooms

Wireless systems are becoming increasingly popular for conference centers and seminar hotels. Unlike open-air events and large-scale performance facilities, the main focus here is not on coverage or the optimal utilization of as many channels as possible, but maximum flexibility.

Several events taking place at the same time, adaptable sizes of seminar rooms, and a high level of reliability, combined with maximum mobility of lecturers – these are the essential parameters that need to be considered when planning wireless systems for seminar centers.

The example of a typical seminar hotel can demonstrate the large variety of options available to organizers with a well-designed 8-channel system.

Optimum room coverage via high-performance antennas and diversity reception for preventing dead spots are the key prerequisites. Anything from one to eight channels must be available for three structurally separated rooms, one of which can be divided by a variable partition. Optimum RF coverage of each room is ensured by one pair of booster antennas per room and two pairs in the variable room.

This arrangement maintains full diversity functionality even if the room is partitioned. The various antenna cables from the seminar rooms are joined together by antenna combiners and the signals distributed to the receivers via antenna splitters. Where longer cable runs are needed, additional antenna boosters are integrated into the line.

To save space, the wireless system can be mounted in a rack or placed in a separate equipment room. This unobtrusive installation will not impair the effect of the interior decoration.

**Seminars**

At seminars and lectures held in relatively small rooms, care must be taken to identify possible dead spots that can occur despite the short distances. Furniture, people, lots of electronic devices (luminescent tubes!), curtains, blinds etc. can cause wireless systems to fail even in confined spaces. We recommend using a true diversity system in conjunction with high-performance antennas.

**Specification:**

| | Amount | Item | Description |
|---|---|---|---|
| | 8 x | SR 4000 | True diversity receiver |
| | 4 x | CU 4000 | Charging unit |
| | 8 x | HT/PT 4000 | Handheld or portable transmitter |
| | 2 x | PS 4000 | Antenna splitter |
| | 2 x | PSU 4000 | Central power supply unit |
| | 6 x | ZAPD 21 | Antenna combiner |
| | 8 x | RA 4000 B | Booster antenna |
| | 4 x | AB 4000 | Antenna booster |

# WMS 4000 10-CHANNEL SETUP

## Example: 10-Channel System for Tour Sound

Fitting all components into flight cases as well as the shortest possible setup time are essential for festivals with several acts performing in succession. While one performer is on stage, backstage preparations for the following act must be completed so that it can be started without any drawn-out interruptions due to alterations or soundchecks. Wireless systems in particular require meticulous performance tests to be carried out – both regarding RF and audio signals – before they are connected to the FOH mixer. The advanced software of the SR 4000 receiver makes all this easy. Rehearsal Mode, Auto Setup, and Frequency Scan are just a few of the features that help set up all the RF connections quickly and eficiently.

However, the ultimate quality of the audio signal delivered by the receiver can only be tested by connecting the receiver to the mixer, which is practically impossible once the show has started.

Two HPA 4000 headphone amplifiers, each connected to five receivers, eliminate this problem, enabling you to check audio signal quality quickly and reliably without an additional mixer.

In the example shown above, a complete 10-channel wireless system including antenna splitters, power supply unit and headphone amplifiers can be fitted into a compact 8 U rack. You can also fit two small flight cases with five charging units each for the transmitters, so that all transmitters can be charged completely and simultaneously within just one hour.

And, the complete tour sound package takes up so little space that it can be transported in a standard station wagon – the ideal solution for touring bands.

**Tour Sound**

The WMS 4000 is specifically suited for small tour setups, since the large variety of selectable channels allows you to find a working setup for practically any application.

For example, a complete 4-channel system can be fitted into a flight case measuring only 6 U high (see below). Thanks to the integrated PSU 4000 power supply unit and the PS 4000 antenna splitter with two front antennas, all you need to do is connect a single power cable! All other components, such as the transmitters, can be stored in a 2 U drawer.

**Specification:**

| | Amount | Item | Description |
|---|---|---|---|
| | 10 x | SR 4000 | True diversity receiver |
| | 10 x | HT/PT 4000 | Handheld or portable transmitter |
| | 5 x | CU 4000 | Charging unit |
| | 1 x | PSU 4000 | Central power supply |
| | 3 x | PS 4000 | Antenna splitter |
| | 2 x | HPA 4000 | Headphone amplifier |
| | 2 x | SRA 2B | Active wideband directional antenna |

# WMS 4000 16-CHANNEL SETUP

## Example: 16-Channel System for Mobile Use

Although most venues are equipped with fixed wireless installations, special performances frequently require specific mobile systems. The reasons for this may vary, but the basic requirements are the same: a high-performance wireless system in a portable rack, whose audio signals can be fed to the local system simply through a multicore cable. Key prerequisites are minimum space requirements, quick cabling and clearly arranged controls.

Our example is a mobile 16-channel system for a musical performance. Apart from transmitters and receivers, it comprises antenna splitters and power supply units, thus minimizing the necessary amount of antenna, power and DC cables.

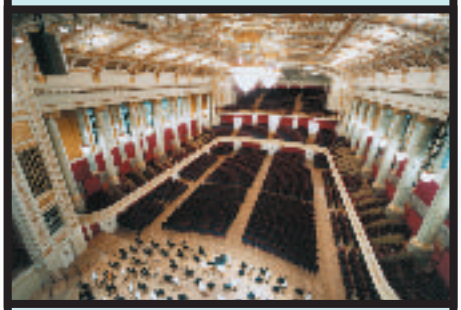
Especially the amount of power feeder cables was substantially reduced, since four antenna splitters, 16 receivers and active antennas, as well as one spare antenna splitter and four spare receivers, were powered by only two PSU 4000 power supply units.

By daisy-chaining the antenna splitters, all antenna cable runs were kept within the rack. Just two antenna cables and two power cables were connected to the rack. By comparison, the IVM 1 In-ear Monitor System also installed in the rack, with just two channels, needed the same amount of feeders as a 16 (or 20) channel wireless system.

Apart from the convenient and space-saving arrangement, this setup helped to achieve a pleasant “side effect” as it substantially reduced hum from power cables.

**The Vienna Konzerthaus**

Along with the Vienna State Opera and the Golden Musikvereinssaal (concert hall), the Vienna Konzerthaus is one of the most famous venues in Vienna. The Vienna Konzerthaus increasingly stages non-classical performances, such as musicals or rock concerts. Its many years of cooperation with AKG have resulted in optimum sound for widely differing requirements.



**Specification:**

| | Amount | Item | Description |
|---|---|---|---|
| | 16 x | SR 4000 | True diversity receiver |
| | 2 x | HT/PT 4000 | Handheld or portable transmitter |
| | 8 x | CU 4000 | Charging unit |
| | 4 x | PS 4000 | Antenna splitter |
| | 2 x | RA 4000 B | Omnidirectional wideband booster antenna |
| | 2 x | AB 4000 | Antenna booster |
| | 2 x | ZAPD 21 | Antenna combiner |